



## Testing IR-DRG's

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### *Summary*

*APDRG were selected in Switzerland – among other reasons – because they were and still are the most widely used classification system and they were an appropriate step-in system to accommodate the low level of coding competence in the hospitals.*

*As in many countries, not only coding quality has improved and new classification systems have been developed but, in a number of countries, a switch to third generation systems have successfully taken place.*

*One of the newest of these so-called third generation systems is the International Refined Diagnoses Related Groups (IR-DRG). Unlike similar systems who would require a change of classifications at national level – such as the AR-DRG – the IR-DRG use the same classifications as are used today in all swiss hospitals. This was considered a significant advantage, since a test could be envisaged rapidly and the results compared with the same database used for the APDRG's.*

### **1. Objectives and Benefits**

In deciding to move to the use of Diagnosis Related Groups (DRGs) as a basis for funding hospitals, governments have several objectives in mind. While they vary across countries, these objectives often include:

- maintain quality of care – this is the original purpose of the DRGs
- rationalize health care expenditures – for example, Portugal knew that, as it moved into the EU, its people would demand more sophisticated and expensive inpatient hospital care. DRGs were used to control and manage the growth in health care spending in Portugal.
- minimize administrative burden – using DRGs involves paying a standard price for a standard product. This is not unusual for governments.
- minimize burden to providers– DRGs use standard data that is commonly collected on billing and encounter forms.
- provide management information: 3M's philosophy has always been to develop a system for management because this system will, in fact, also prove to be useful for budgeting and for payment. This is the philosophy behind the new International Refined DRGs (IR-DRGs), the advanced All Patient Refined DRGs, as well as the International Ambulatory Patient Groups (I-APGs (the outpatient analogue to the inpatient DRGs) and Clinical Risk Groups (CRGs), a person based rate setting system.

There are related objectives which have guided the updating and development of the DRGs over the past thirty years. These include:

- aid in clinical management – by emphasizing the importance of clinical judgment in forming the categories.
- provide equitable allocation methodology – by providing categories that are homogeneous in terms of resource use.
- promote efficiency & effectiveness in managing inpatient care – by giving providers financial incentives to become more efficient and the tools to respond constructively to these incentives.
- increase accuracy in reporting workload and associated costs, by using the information created through this process in a way that influences resources.

The use of DRGs results in certain benefits to hospitals and to funding agencies such as insurance companies and governments. These are summarized in Table One.

### ***1.1. Table 1: Benefits of DRGs***

<b>Hospitals</b>	<b>Funding Agencies</b>
<ul style="list-style-type: none"> <li>•Provide Comparative Information</li> <li>•Relate Funding to Case-mix</li> <li>•Provide Efficiency Incentives</li> <li>•Provide Predictable Revenue Stream</li> <li>•Support Internal Management Efforts</li> </ul>	<ul style="list-style-type: none"> <li>•Efficient Resource Allocation</li> <li>•Allocate Resources Based on Production</li> <li>•Increased Understanding of Service Provision</li> <li>•Facilitates Comparative Reporting</li> <li>•Improve data quality</li> </ul>

### ***1.2. Diagnosis Related Groups***

#### ***1.2.1. Definition***

DRGs are a patient classification scheme which provides a means of relating the type of patients a hospital treats (i.e., its case-mix) to the costs incurred by the hospital. This is done by classifying patients into mutually exclusive groups based on the patient's principal diagnosis and other information. DRGs use information that is routinely collected for classification. The categories are homogeneous clinically and in terms of resource use. 3M DRGs are updated annually to account for new codes and to allow for new technologies and for changes in medical practice.

#### ***1.2.2. Changing Role***

As the healthcare industry has evolved there has been increased demand for a patient classification system that can be used for applications beyond resource use, cost and payment. Examples of new uses include:

- Comparing hospitals across a wide range of resource and outcome measures.
- Evaluating differences in inpatient outcomes of care such as inpatient mortality rates.
- Implementing and supporting clinical pathways and continuous quality improvement projects.

These requirements have led to the development of increasingly sophisticated and flexible DRG systems.

### 1.2.3. Future Directions

Future directions for DRGs may be summarized by the following six points:

1. Increasing refinement<sup>i</sup>
  - a. Explicit severity adjustment (e.g., APR-DRGs, Australia Refined-DRGs, IR-DRGs)
  - b. Distinguish hospital caused problems from those problems that the patient had on admission (large 3M/California project is on-going)
  - c. Link to outpatient care (e.g., Extended IR-DRGs, I-APGs)
2. Common base, country specific refinements
  - a. World Health Organization's ICD-10 model
  - b. Flexible category extensions and variable severity level definitions for IR-DRGs
3. Additional Dimensions Have/Will Be Added
  - a. Mortality
  - b. Morbidity
4. Extend to Post Acute Settings (in process.)
5. Code Independence
  - a. Interchangeable for ICD-9 or 10 – allows international comparisons to all countries as well as comparison of historical and current data.
  - b. “Plug and play” procedure codes – allows inexpensive updating and localization.
6. Easy to Localize While Maintaining Common Framework – This involves the way that software is written, i.e., using programs to write and to document distributable software efficiently so that “CH-DRGs” would be affordable should Switzerland desire to move in this direction, as well as using concepts such as code independence and the common base to facilitate comparisons across countries.

### 1.3. The International Refined DRGs

The International Refined DRGs begin with an APR base and use simpler, but more robust, severity logic. This increases the likelihood that observed differences between hospitals will be real instead of differences in coding completeness. IR-DRGs are further unique in that they are Code Independent between ICD-9-CM and I-10 diagnoses codes. That is, a patient coded in one of these systems and then the other will wind up in the same IR-DRG. The IR-DRGs are easy to localize in that the base system can be easily modified with country specific refinements, and in that the procedure codes are easily replaced with alternatives. For example, the IR-DRGs are under consideration for use in Thailand. Thailand has a high incidence of serious tropical diseases – which are not handled adequately by ICD-10 nor by any current DRG system. The IR-DRGs can easily be adjusted to accommodate Thai extensions of ICD-10.

As important, the IR-DRGs are native, not mapped from one coding system to another. This insures that their performance will not be impaired by data shrinkage due to mapping. Finally, 3M intends that the IR-DRGs become an international standard. To this end, 3M is willing to provide the IR-DRG definitions as a base for country specific DRGs at extremely attractive terms.

## 2. Testing the IR-DRG

Testing the IR-DRG was greatly facilitated by the fact that the same classifications that are now used in Swiss hospitals could be used without adaptation or mapping. Using the same database as for the APDRG's (see paper on "Swiss cost-weights version 3: the mature version" presented at the 17th PCS/E for more detailed information) allowed to proceed by comparison.

### 2.1. *Phase 1: Testing the grouper*

Grouping the same database as used for the APDRG's led to the identification of a number of differences, showing either improvements or corrections to be made. Furthermore, problems encountered with the APDRG's and documented were used to test if the IR-DRG's brought better solutions.

Intensive cooperation between the two partners led to the development and testing of two successive versions, the last one being now completely satisfactory.

### 2.2. *Phase 2: adjusting it to the national specificity*

As already mentioned, the concept of IR-DRG's allows for national or regional adaptations without compromising data comparability. Phase 2 – now in process – will bring into evidence what is needed for adjusting the IR-DRG's to the Swiss hospitals specificity, one aspect of which is their relative small size (slightly over one hundred beds in average). The objective of this second phase is to identify where we need the full range of the three levels of severity provided by each IR-DRG and where we don't. We might not need the whole range of the actual IR-DRG's once this analysis is over: experts working on the data are expecting that 6 or 700 groups will probably be enough.

## 3. Conclusions

It might well be that the CH-DRG's (IR-DRG's for Switzerland) – or SR-DRG's (for Swiss Refined) as was suggested recently – finally add up to considerably less than the actual number of groups. Yet, because of the way the IR-DRG's are conceived, it will not affect the possibilities for comparison and benchmarking across regions or nations. Thanks to this aspect, we can move towards greater interoperability.

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<sup>i</sup> Medicare Payment Advisory Commission, Chapter 3, Improving Medicare's payments for inpatient care and for teaching hospitals, in Report to the Congress: Selected Medicare Issues, June, 2000:51-77.